



Formal definition and dating of the GSSP (Global Stratotype Section and Point) for the base of the Holocene using the Greenland NGRIP ice core

S. O. Rasmussen

Centre for Ice and Climate, Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark (olander@gfy.ku.dk)

The Greenland ice core from NorthGRIP (NGRIP) contains a proxy climate record across the Pleistocene–Holocene boundary of unprecedented clarity and resolution. Analysis of an array of physical and chemical parameters within the ice enables the base of the Holocene, as reflected in the first signs of climatic warming at the end of the Younger Dryas/Greenland Stadial 1 cold phase, to be located with a high degree of precision. This climatic event is most clearly reflected in an abrupt shift in deuterium excess values, accompanied by more gradual changes in $\delta^{18}\text{O}$, dust concentration, a range of chemical species, and annual layer thickness. A timescale based on multi-parameter annual layer counting provides an age of 11,700 calendar yr b2k (before AD 2000) for the base of the Holocene, with a maximum counting error of 99 yr. A proposal that an archived core from this unique sequence should constitute the Global Stratotype Section and Point (GSSP) for the base of the Holocene Series/Epoch (Quaternary System/Period) has been ratified by the International Union of Geological Sciences.

The results have been published in *Journal of Quaternary Science* vol. 24(1), pp. 3–17, 2009 by an author team consisting of Mike Walker, Sigfus Johnsen, Sune Olander Rasmussen, Trevor Popp, Jørgen-Peder Steffensen, Phil Gibbard, Wim Hoek, John Lowe, John Andrews, Svante Björck, Les C. Cwynar, Konrad Hughen, Peter Kershaw, Bernd Kromer, Thomas Litt, David J. Lowe, Takeshi Nakagawa, Rewi Newnham, and Jakob Schwander. The poster presents the definition and the underlying data.